APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,422	12/19/2000	Shoupu Chen	81754RRS	5111

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Patent Legal Staff
Eastman Kodak Company
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EXAMINER
DESIRE, GREGORY M

ART UNIT	PAPER NUMBER
2625	

DATE MAILED: 01/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _19 December 2000_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-28_ is/are pending in the application.

  4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-10, 14-24, 26 and 28_ is/are rejected.

7)☒ Claim(s) _11-13 and 25-27_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _19 December 2000_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

  a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

  * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

  a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _2 and 3_.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1, 3-4, 6, 8, 15, 17-18, 20 and 22 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Darrell et al (6,445,810), Kado et al (5,905,807) in further view

of Gupta (6,204,858).

Regarding claim 1, 15 Darrell discloses

`   Measuring the intensity of the pixels in the image (note col. 7 lines 15, examiner

interprets presenting of a pixel as measuring intensity);

Determining the probability that each pixel is an object based upon the intensity

of pixel (note col. 5 lines 14-16, the P (skin) class examiner interprets as probability that

a pixel is of that object);

Determining the probability that each pixel is not an object based upon the

intensity of the pixel (note col. 5 lines 14-16, the P (non-skin) class, examiner interprets

as probability that a pixel is not that object);

Determining whether each pixel is an object by analyzing the relationship

between the probability that the pixel is an object and probability that the pixel is not an

object (note col. 5 lines 16-17). The likelihood ratio P (skin)/ P (non-skin) computing a

class score determines whether each pixel is an object.

Darrell is silent disclosing object recognized is an iris. However, Kado teaches iris detection (note fig. 8, 105 and fig. 9b, 302). Therefore it would have been obvious to one having ordinary skills in the art to include iris detection in the system of Darrell as evidenced by Kado. Darrell disclose facial recognition using skin color and Kado in the same field of endeavor recognize iris as part of facial recognition. Kado's system provides a more accurate means for extracting facial features (note col. 1 lines 58-59 and col. 2 lines 1-4).

Darrel and Kado is silent teaching red intensity of pixels. However, Gupta measure red intensity of pixel (note col. 5 lines 15-25). Therefore it would have been obvious to one having ordinary skills in the art to include measuring red intensity in the system of Darrell and Kado as evidenced by Gupta. Darrel and Kado measure and determine probability of intensity value of the image and Gupta in the same field of endeavor measure red intensity of iris, providing the user with a faster process to identify pixel (note col. 1 lines 25-35).

Regarding method claims 3 and 17 Darrell, Kado and Gupto discloses,

Detecting skin color regions in the image (note Darrell, col. 4 lines 30-33) and wherein the step of measuring the red intensity comprises measuring the red intensity of only the pixels in the skin region (note Darrell col. 7 lines 15). The presenting of pixel of the image is based on skin region.

Regarding method claims 4 and 18 Darrell, Kado and Gupto discloses,

Performing color equalization on the image prior to the step of detecting skin

color regions in the image (note, Gupta col. 2 lines 44-46). Performing color adjusting

of Gupta equalizes the image for detection.

Regarding method claims 6, 8, 20, 22 Darrell, Kado and Gupto discloses,

Finding oval shape skin colored regions in the image and wherein the step of

measuring the red intensity of the pixels in the image comprises measuring only those

pixels within an oval shaped skin color region (note Kado, col. 4 lines 10-16 and col. 9

lines 1-5). The edge extraction of facial image and shape storing means, extract iris

having oval shape of skin region.

3.   Claim 2, 5, 7, 9, 16, 19, 21 23 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Darrell et al (6,445,810), Kado et al (5,905,807) and Gupta

(6,204,858) in view of Cham et al (6,353,679).

Regarding claims 2 and 16 Darrell, Kado and Gupta are silent disclosing

determining whether each pixel is an iris based upon the application of Bayes Model.

However, Cham teaches application of Bayes model to determine a result (note fig. 5a

in connection with col. 7 lines 19-30). Therefore it would have been obvious to one

having ordinary skills in the art to teach the application of Bayes Model in the system of

Darrell, Kado and Gupta as evidences Cham. Darrell Kado and Gupta determine the

probability whether a pixel recognized by an object using Gaussian probability. Cham in

the same field of endeavor includes the application of Bayes model, providing an

improved method for refining the state of models of objects of complex set of data (note col. 2 lines 12-20).

Regarding claims 5, 7, 9, 19, 21, 23 Darrell, Kado, Gupta and Cham discloses,

Probability of the occurrence of an iris in a skin color region, and the probability of the occurrence of a non-iris pixel in a skin color region (Darrell col. 14-16). Darrell teaches probability in the skin color region.

4.   Claims 10 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swain (6,381,345) in view of Cham et al.

Regarding claims 10 and 24 Swain discloses,

Finding a skin color region (note fig. 1 block 11 and col. 4 lines 12-15) (Blurring of the image finds skin region);

Detecting iris color pixels in the skin colored region (note coll. 4 lines 45-60, segmenting the eyes can detect iris color pixel in the facial skin region)

Locating eye positions upon the detected iris color pixel (note fig. 39 and col. 5 lines 1-15). Extracting eye parameters for iris pixels locates eye positions.

Swain is silent using Bayes modes to detect iris pixels. However, Cham teaches application of Bayes model to determine values using probability density function (note fig. 5a in connection with col. 7 lines 19-30). Therefore it would have been obvious to one having ordinary skills in the art to teach the application of Bayes Model in the system Swain. Swain detects iris color pixels in a facial region. Cham in the same field

of endeavor includes the application of Bayes model, providing an improved method for refining the state of models of object recognition of complex set of data (note col. 2 lines 12-20).

5.   Claims 14 and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Swain and Cham in view of Darrell et al.

Regarding claims 14 and 28 Swain and Cham discloses determining pixel probability using probability density function, Bayes model.   Swain and Cham are silent specifically teaching pixel is an object and a non-object. Darrell teaches probability of object and non-object (note col. 5 lines 14-16, P (skin)/ P (non-skin)). Therefore it would have been obvious to one having ordinary skills in the art to include probability of an object occurring and the probability non-object occurrence in the system of Swain and Cham as evidenced by Darrell. Swain and Cham detect iris color using Bayes Model. Darrell in the same field of endeavor classifies an image between object and non-object detecting objects in various time periods (note col. 2 lines 23-26).

Allowable Subject Matter

6.   Claims 11-13 and 25-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 11 and 25, the prior art fails to disclose the specific nature of locating eye positions base upon the detected iris color pixels. Claims 12-13 and 26-27 are dependent on the object claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory M. Desire whose telephone number is (703) 308-9586. The examiner can normally be reached on M-F (8:30-6:00) Second Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Gregory M. Desire
Examiner
Art Unit 2625

G.D.
January 7, 2004

BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600